Private Well Disinfection & Water Sampling

You do not want the water you drink, cook with and wash dishes in to be contaminated with microorganisms that cause disease. Unsafe water can spread a number of diseases known as "waterborne" infections–typhoid, cholera and dysentery, to name a few. All of these illnesses are caused by microorganisms in the intestines of infected people and animals, who may not always appear to be sick. Water supplies can be contaminated when the feces (bodily wastes) from infected individuals are not properly disposed of, and instead seep into underground water or run off into surface water supplies.

Unfortunately, disease producing microorganisms are difficult to detect in water samples–fortunately, coliform bacteria are not hard to detect.

"Coliforms" are a group of microorganisms that do not cause disease, but which are found in the lower intestinal tract of human beings and other warm-blooded animals. Millions of coliforms are expelled each time a person or animal defecates. So when coliform organisms are found in a water sample, they indicate that feces may have contaminated the water and that immediate action should be taken to stop the contamination. When well water shows coliforms, disinfection procedures should be followed. If a doctor suggests that gastric cramps or chronic diarrhea may have been caused by contaminated water, well disinfection should be performed immediately and water samples should be submitted for analysis. In addition, recently constructed or recently repaired wells must be disinfected to prevent bacterial growth in the well and in the plumbing system. Well disinfection procedures are described in this pamphlet on page 2.

For some water sources, continuous disinfection equipment should be installed:

- any water source with repeated samples showing coliforms,
- shallow wells,
- hand-dug wells,
- cisterns, or
- surface water sources.

Information about continuous disinfection equipment may be obtained from local well drillers and plumbing suppliers.

Taking Water Samples

1 You must use a sample container provided by an approved laboratory **(see list of public health laboratories on page 2).**

2 You should find a proper location to take a sample, preferably an outside faucet that does not leak (avoid rubber hoses, fire hydrants, dirty areas and areas behind bushes).

- Do not take samples from kitchen or bathroom sinks.
- Avoid sampling on extremely windy days or when it is raining.
- Open the sample area faucet to full flow for three minutes to clear the line.
- Then, reduce the flow to a slow, steady, sprayless stream.

3 Exercise care in handling samples! Samples are extremely easy to contaminate.

- Do not touch the inside of the container and do not rinse it.
- Fill the container without splashing, then seal it.

4 Complete submission form G-19, which may be obtained along with a test container from a public health laboratory (see the list on page 2). Using the instructions below, private owners will complete only the following items:

- For the "Name of Water System" item, write "private."
- Fill in the county name and your name and mailing address in the area designated as "Send Results To."
- Provide the date and time.
- For the "Type of System" item, indicate "individual."
- Then, complete as much information as possible under the "Water Source" item.

Delivering the Sample

5 Samples should be prepared properly for shipment. Leaking samples cannot be accepted for analysis.

- A sample must arrive at a public health laboratory within 30 hours from the time the sample was collected.
- Samples may be mailed or delivered. Public health laboratories in Texas are listed on page 2.

6 Results will be forwarded to you after completion of the tests. The most important part of the results will be the indication of "coliform organisms found" or "coliform organisms not found."

- A "not found" report indicates coliform organisms are absent, and means the water is considered bacteriologically safe to drink at the time of sampling.
- A positive or "coliform found" report indicates that coliform organisms are present and the water may be unsafe. If repeated bacteriological testing reveals the possibility of con-

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tamination via a "coliform found" result, then well disinfection is recommended.

● When a laboratory analysis report indicates "unsuitable for analysis," it means the laboratory was unable to conduct a valid test to draw a conclusion. In this case, the well owner should consider well disinfection before resubmitting a sample.

Well Disinfection

7 When a laboratory analysis report shows the presence of coliform organisms, use the following procedure for well disinfection:

First - Locate the wellhead and remove an access plug or bolt so that the area within the well casing is exposed. (See diagram on back page.)

Second - Using a funnel, pour in an appropriate amount of liquid chlorine bleach (Clorox, Purex, etc.). See chlorine bleach dosage below.

Chlorine Bleach Dosage Table for Well Disinfection:

Well Depth	Gallons of Bleach
Less than 100 ft.	1/2 to 1 gallon
100 to 200 ft.	1 to 1-1/2 gallons
200 to 300 ft.	2 gallons
300 and above	2-1/2 gallons or more

These dosages are approximate. Greater amounts are recommended for excessively cloudy water or for hand-dug wells.

Third - Using the nearest faucet and a garden hose, allow water to run through the funnel into the well for two or three hours. This will circulate the chlorinated well water and improve the germ-killing action by allowing all fittings and equipment in the well to be exposed to the chlorine solution.

Fourth - After the well water has circulated for a while, the garden hose and funnel may be removed and the access plug replaced. The disinfection process should be extended throughout the entire plumbing system.

Fifth - To disinfect the remainder of the plumbing system, turn on the next available faucet and allow it to run until the bleach odor can be detected, then turn it off. Repeat this step throughout the plumbing system at each faucet. Then, allow the chlorinated water to remain in the plumbing system over night, or for 24 hours if possible. During this time, the water should not be used for drinking or cooking.

Sixth - After disinfecting the well and plumbing system, flush all faucets until the bleach odor disappears and the water is clear of any debris or color. Flush outside faucets first – you do not want to flood the septic system.

Seventh - Then, submit another bacteriological sample to determine if the disinfection process was successful.

Keep in mind that a single disinfection may not be sufficient because certain well systems, particularly shallow wells, hand-dug wells, wells in fissured areas and old wells, are more vulnerable to contamination. Water from these types of systems should be checked by periodically submitting samples for bacteriological analysis.

8 Retrace the proper steps for sampling, carefully following guidelines. Most reasons for an unsuitable sample can be avoided.

Public Health Laboratories

Sample containers may be obtained and returned for analysis from the public health laboratories listed below. Contact the respective laboratory for hours of operation and cost information.

Abilene-Taylor County Health Department
2241 South 19th
Abilene, Texas 79605
915/692-5600

Amarillo Bi-City County Health Department
P.O. Box 1971
4001 S. Osage Street
Amarillo, Texas 79103
806/374-4227

Brazoria County Health Department
434 E. Mulberry
Angleton, Texas 77515
409/849-5711 Ext. 1628

Brazos County Health Department
201 N. Texas Avenue
Bryan, Texas 77803-5317
409/361-4440

Corpus Christi-Nueces County Health Department
P.O. Box 9727
1702 Horne Road
Corpus Christi, Texas 78469
512/851-7214

El Paso City-County Health Department
222 South Campbell
El Paso, Texas 79901
915/543-3536

Fort Worth City Health Department
1800 University Drive
Fort Worth, Texas 76107
817/871-7249

Galveston County Health District
P.O. 939, 1207 Oak Street
LaMarque, Texas 77568
409/938-7221 Ext. 449

Greenville-Hunt County Health Department
Courthouse, Room 402
2500 Lee Street
Greenville, Texas 75401
903/408-4142

Houston City Health and Human Services
1115 S. Braeswood
Houston, Texas 77030
713/794-9610

Laredo-Webb County Health Department
P.O. Box 2337
2600 Cedar Street
Laredo, Texas 78041
210/723-2051 Ext.259

Lower Colorado River Authority
3600 Lake Austin Blvd.
P.O. Box 220
Austin, Texas 78767
512/473-3374

Lubbock City Health Department
P.O. Box 2548
1902 Texas Avenue
Lubbock, Texas 79405
806/767-2908

Midland Health Department
P.O. Box 4905
501 Andrews Highway
Midland, Texas 79704
915/685-7377

Nova Biologicals, Inc.
1775 E. Loop 336
Suites 4 & 5
Conroe, Texas 77303
409/756-5333

Paris-Lamar County
Health Department
P.O. Box 938
740 South West 6th Street
Paris, Texas 75460
903/785-4561

Port Arthur City Health Department
P.O. Box A
431 Beaumont Avenue
Port Arthur, Texas 77641
409/983-8830

San Angelo-Tom Green County
Health Department
P.O. Box 1751
2 City Hall Plaza
San Angelo, Texas 76902
915/657-4234

San Antonio Metropolitan
Health District
332 West Commerce
San Antonio, Texas 78205
210/299-8747

Sweetwater-Nolan County Health Department
P.O. Box 458
301 E. 12th Street
Sweetwater, Texas 79556
915/235-5463

Texarkana-Bowie County
Family Health Center
P.O. Box 749
902 W. 12th Street
Texarkana, Texas 75504
903/792-8211 Ext.30

Texas Department of Health
1100 West 49th Street
Austin, Texas 78756
512/458-7578

Tyler-Smith County Health Department
P.O. Box 209
815 N. Broadway 75710
Tyler, Texas 75710-0209
903/535-0090

Victoria County Health Department
107 W. River Street
P.O. Box 2350
Victoria, Texas 77902
512/578-6281 Ext. 41

Waco-McLennan County Health District
225 West Waco Drive
Waco, Texas 76707
817/750-5471

Wichita Falls-Wichita County
Health Department
1700 Third Street
Wichita Falls, Texas 76301
817/761-7873

For additional assistance, contact the Texas Natural Resource Conservation Commission regional office in your area:

Region 1 - Amarillo
3918 Canyon Drive
Amarillo, Texas 79109-4996
806/353-9251

Region 2 - Lubbock
4630 50th Street, Suite 600
Lubbock, Texas 79414-3509
806/796-7092

Region 3 - Abilene
209 South Danville, Suite 200B
Abilene, Texas 79605
915/698-9674

Region 4 - Arlington
(Duncanville Office)
1019 N. Duncanville Road
Duncanville, Texas 75116-2201
214/298-6171

Region 5 - Tyler
11406 Highway 64 East
Route 14, Box 254
Tyler, Texas 75707
903/566-0476

Region 6 - El Paso
7500 Viscount Blvd., Suite 147
El Paso, Texas 79925
915/778-9634

Region 7 - Odessa
2626 J.B. Shepperd Parkway Blvd.
Building B-101
Odessa, Texas 79761
915/362-6997

Region 8 - San Angelo
301 W. Beauregard Ave., Suite 202
San Angelo, Texas 76903
915/655-9479

Region 9 - Waco
6801 Sanger Ave., Suite 2500
Waco, Texas 76710-7807
817/751-0335

Region 10 - Beaumont
3870 Eastex Fwy, Suite 110
Beaumont, Texas 77703-1830
409/892-2119

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Region 11 - Austin
1921 Cedar Bluff, Suite 150
Austin, Texas 78758
512/339-2929

Region 12 - Houston
4150 Westheimer
Houston, Texas 77027-4417
713/625-7900

Region 13 - San Antonio
140 Heimer Road, Suite 360
San Antonio, Texas 78232-5042
210/490-3096

Region 14 - Corpus Christi
4410 Dillon Lane, Suite 47
Corpus Christi, Texas 78415-5326
512/851-8484

Region 15 - Harlingen
(Weslaco Office)
813 East Pike Blvd.
Weslaco, Texas 78596-4935
210/968-3165

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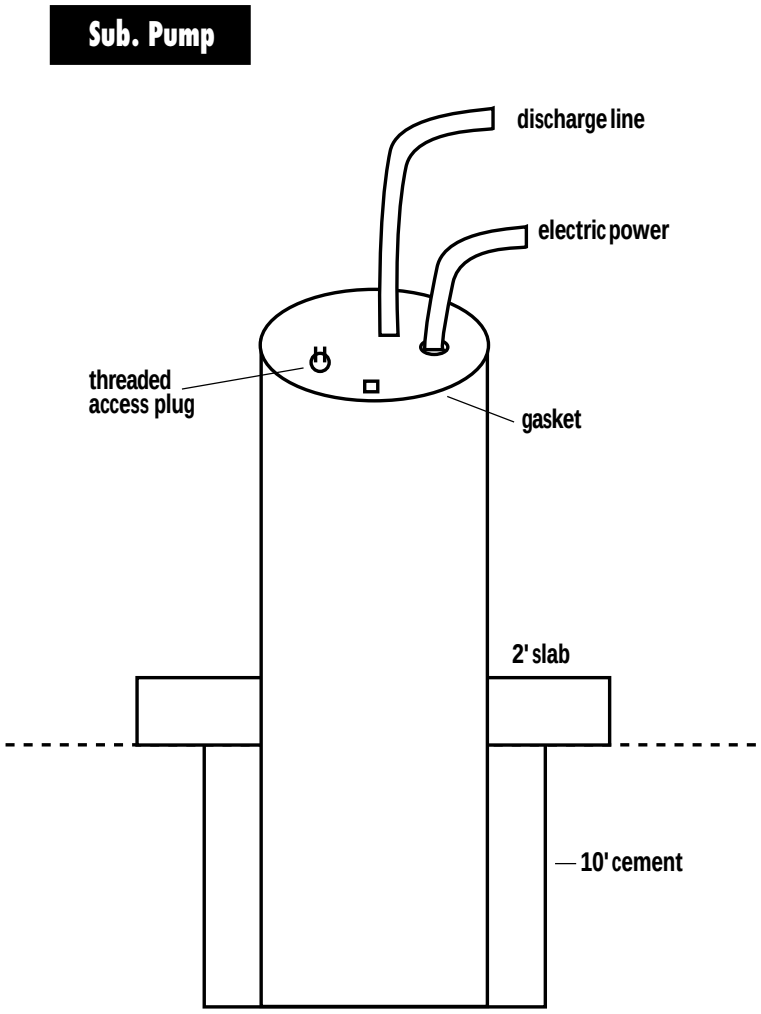

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TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
PO BOX 13087
AUSTIN TX 78711-3087